TECHNICAL REVIEW DOCUMENT
For
RENEWAL TO OPERATING PERMIT 95OPDE049

Public Service Company of Colorado – Denver Steam Plant
Denver County
Source ID 0310041

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August 2013
Revised October 2013

Reviewed by:

Operating Permit Supervisor:	Matt Burgett
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I. Purpose:

This document will establish the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed operating permit proposed for this site. The current Operating Permit was issued June 1, 2009. The expiration date for the permit is June 1, 2014. This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted April 30, 2013, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at www.colorado.gov/cdphe/airTitleV. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

This facility generates steam sold for heating and other purposes and is classified under the Standard Industrial Classification 4961. The significant emission units at this facility

consist of two industrial boilers burning natural gas and/or No. 2 fuel oil to produce steam.

Based on the information available to the Division and provided by the applicant, it appears that no modifications to these significant emission units have occurred since the original issuance of the operating permit.

The facility is located at 1875 Delganey Street near downtown Denver. The Denver metro area is classified as attainment/maintenance for particulate matter less than 10 microns (PM_{10}) and carbon monoxide. Under that classification, all SIP-approved requirements for PM_{10} and CO will continue to apply in order to prevent backsliding under the provisions of Section 110(l) of the Federal Clean Air Act. The Denver Metro Area is classified as nonattainment for ozone and is part of the 8-hr Ozone Control Area as defined in Colorado Regulation No. 7, Section II.A.1.

Eagles Nest National Wilderness Area and Rocky Mountain National Park, both federal class I designated areas, are within 100 km of this facility.

The summary of emissions that was presented in the Technical Review Document (TRD) for the previous renewal permit issuance has been modified to update potential and actual emissions. The emissions in the table below represent emissions from both boilers together, no other equipment is included in this total.

Pollutant	Potential to Emit (PTE)		Actual Emissions – Combination
	100% Natural Gas	100% No. 2 Fuel Oil	
PM[1]	242.1	242.1	1.2
PM_{10}	242.1	242.1	1.2
SO_2[2]	1.2	2,976.2	0.4
NO_X	544.7	341.1	170.7
CO	163.4	70.9	51.2
VOC	10.7	2.8	3.4
Total HAPS	3.67	1.8	0.03
Highest Single HAP[3]	3.5	1.2	

[1]PTE, when burning any fuel, is based on the Reg 1 PM limit (0.124 lbs/MMBtu – boiler 1 and 0.120 lb/MMBtu - boiler 2) x design heat rate x 8760 hrs/yr. PM_{10} is assumed to be 100% PM.
[2]PTE, when burning No. 2 fuel oil, is based on the Reg 1 SO_2 limit (1.5 lbs/MMBtu for each boiler) x design heat rate x 8760 hrs/yr.
[3]Highest single HAP is hexane, when burning natural gas and nickel when burning No. 2 fuel oil.

Potential to emit for the boilers is based on the information identified in the table and the maximum hourly fuel consumption rate, AP-42 emission factors and 8760 hrs/yr of operation. Actual emissions are based on APENs submitted on April 23, 2012 for boiler 1 (2011 data) and March 14, 2013 for boiler 2 (2012 data).

In the above table, the breakdown of HAP emissions by fuel burned and individual HAPs is provided on page 8 of this document. As discussed in the footnotes in the above table, HAPS emissions are based on the maximum hourly fuel consumption rate, 8760 hrs/yr of operation and the AP-42 emission factors.

National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories

As indicated in the above table summarizing potential to emit, the facility is not a major source for HAPS and is an area source (minor source) for HAPs. As indicated in the technical review document to support the second renewal permit (issued June 1, 2009), EPA has been promulgating NESHAPs (also referred to as "MACT requirements") for area sources, and those requirements that could potentially apply to this facility are discussed below.

Paint Stripping and Miscellaneous Surface Coating at Area Sources (40 CFR Part 63 Subpart HHHHHH)

As indicated in the technical review document to support the second renewal (issued June 1, 2009), the Division considers that any spray coatings of motor vehicles and mobile equipment and spray application of coatings that contain the target HAP at this facility would meet the definition of facility maintenance. The source indicated that none of the paint stripping chemicals used at the facility contain methylene chloride; therefore, the provisions in 40 CFR Part 63 Subpart HHHHHH do not apply.

Reciprocating Internal Combustion Engines (40 CFR Part 63 Subpart ZZZZ)

The reciprocating internal combustion engine (RICE) MACT was signed as final on February 26, 2004 and was published in the Federal Register on June 15, 2004. Under this rulemaking only RICE that were > 500 hp and located at major sources of HAPS were subject to the requirements. Subsequent revisions were made to the RICE MACT to address new engines $\leq$ 500 hp located at major sources and new engines of all sizes at area sources (final revisions published January 18, 2008), existing compression ignition engines $\leq$ 500 hp at major sources and all sizes at area sources (final revisions published March 3, 2010) and existing spark ignition engines $\leq$ 500 hp at major sources and all sizes at area sources (final revisions published August 20, 2010). Revisions were made on January 30, 2013 and these revisions primarily changed the requirements for engines greater than 500 hp located at area sources and the operating requirements for emergency engines.

The insignificant activity list identifies "portable welder gas engines" and "portable generator gas engines". These engines likely qualify as non-road engines and therefore are not subject to the requirements in 40 CFR Part 63 Subpart ZZZZ. At the request of the Division, the source submitted information indicating that two welding machines and four portable generators are mounted on service trucks and that one welding machines

is mounted on a two wheel trailer. The service trucks are moved daily and the welding equipment and/or generators are used for repairs as needed. The welding machine that is mounted on the two-wheel trailer is moved as needed for repair jobs and is generally moved at least quarterly. The Division agrees that these engines qualify as non-road engines and are not subject to the requirements in Subpart ZZZZ.

Industrial, Commercial and Institutional Boilers located at Area Sources (40 CFR Part 63 Subpart JJJJJJ)

The requirements in 40 CFR Part 63 Subpart JJJJJJ do not apply to gas fired boilers. The definition of gas-fired boiler in 40 CFR Part 63 Subpart JJJJJJ includes boilers that burn fuel oil during periods of natural gas curtailment, gas supply emergencies and periodic testing, as long as periodic testing does not exceed 48 hours in any calendar year. As long as the boilers at this facility meet the definition of gas-fired units, these requirements do not apply.

New Source Performance Standards (NSPS)

EPA has promulgated NSPS requirements for new source categories since the issuance of the second renewal permit for this facility. NSPS requirements generally only apply to new or modified equipment and the Division is not aware of any modifications to existing equipment or additions of new equipment that would render equipment at this facility subject to NSPS requirements. However, because the recently promulgated NSPS requirements address equipment that may not be subject to APEN reporting or minor source construction permit requirements, the applicability of some of the newly promulgated requirements are being addressed here.

NSPS Subpart JJJJ – Stationary Spark Ignition Engines

NSPS Subpart JJJJ applies to stationary spark ignition engines that commenced construction, reconstruction or modification after June 12, 2006 and were manufactured after specified dates. The date the engine commenced construction is the date the engine was ordered by the owner/operator. As indicated previously, the only engines at this facility qualify as non-road engines, therefore the requirements in NSPS JJJJ do not apply.

NSPS Subpart IIII – Stationary Compression Ignition Engines

NSPS Subpart IIII applies to stationary compression ignition engines that commenced construction, reconstruction or modification after July 11, 2005 and were manufactured after specified dates. The date the engine commenced construction is the date the engine was ordered by the owner/operator. As indicated previously, the only engines at this facility qualify as non-road engines, therefore the requirements in NSPS JJJJ do not apply.

Compliance Assurance Monitoring (CAM) Requirements

As discussed in the technical review document for both the first and second renewals, because neither boiler is equipped with a control device the Compliance Assurance Monitoring (CAM) requirements do not apply to these units.

Colorado Regulation No. 7, Sections XII and XVIII – Requirements for Oil and Gas Operations in the 8-hour Ozone Control Area

Although this facility is located in the 8-hour ozone control area, these requirements do not apply since oil and gas operations do not occur at this facility.

Colorado Regulation No. 7, Section XVI - Requirements for Engines in the 8-Hour Ozone Control Area and Section XVII – Statewide Requirements for Oil and Gas Operations

The requirements in Section XVI were adopted in March 2004 and apply to the 8-hour ozone control area. The requirements in Section XVII were adopted in December 2006 and apply statewide. The requirements in Section XVI apply to natural gas fired engines. The requirements in Section XVII include requirements for condensate tanks, glycol dehydrators and natural gas fired engines.

Condensate tank and glycol dehydrator requirements

There are no condensate tanks or glycol dehydrators at this facility. Therefore, these requirements do not apply.

Engine requirements

The requirements in Regulation No. 7, Section XVI and XVII.E apply to natural gas-fired engines. The engines at this facility qualify as non-road engines and do not burn natural gas, so they would not be subject to these requirements.

Greenhouse Gas Emissions

The potential-to-emit of greenhouse gas (GHG) emissions from this facility is greater than 100,000 TPY CO_2e. Future modifications greater than 75,000 tons per year CO_2e may be subject to regulation (Regulation No. 3, Part A, I.B.44).

Repealed APEN Exemptions

Since the second Title V renewal permit was processed (issued June 1, 2009) the APEN exemptions for engines – limited size and hours (Reg 3, Part A, Section II.D.1.sss) and emergency generators – limited size and hours (Reg 3, Part A, Section II.D.1.ttt) was repealed. The two engines included in the insignificant activity list qualify as non-road engines. Non-road engines are not considered stationary sources and are

not subject to APEN reporting requirements, with the exception of some non-road engines as specified in Colorado Regulation No. 3, Part A, Section II.31c and d. These engines do not meet the criteria for APEN reporting requirements.

III. Discussion of Modifications Made

Source Requested Modifications

The source's requested modifications identified in the renewal application were addressed as follows:

Page following cover page

In the April 30, 2013 renewal application, the source requested that the responsible official and permit contact be updated. These changes were made as requested.

Other Modifications

In addition to the source requested modifications, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments to the Denver Steam Plant Renewal Operating Permit. These changes are as follows:

Page Following Cover Page

- Monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).

Section I – General Activities and Summary

- Condition 1.4 was revised to remove Section IV, Condition 3.d as a state-only requirement, since EPA approved these provisions into Colorado's SIP effective October 6, 2008.

- The following changes were made to the table in Condition 5.1.
    - The title for the third column was revised to "AIRS Pt No."

- Corrected the AIRS pt number for Boiler No. 2.

Section II.2 – Boilers burning fuel oil

- Condition 2.5 was revised to clarify the fuel sampling requirement.

- Conditions 2.8 and 2.9 (opacity requirements) were combined into one condition. In addition, language was added to specify conditions under which opacity observations are not required (e.g. if No. 2 fuel has not been burned), that the "monthly period" is a calendar month, and that if an opacity reading indicates non-compliance, then the length of violation extends until an opacity observation is conducted which indicates compliance.

Section IV – General Conditions

- Changed the version date

- The paragraph in Condition 3.d indicating that the requirements are state-only has been removed, since EPA approved these provisions into Colorado's SIP effective October 6, 2008.

Appendices

- The following changes were made to the insignificant activity list in Appendix A.

  - Language was added to the insignificant activity list in Appendix A to indicate those insignificant activity categories for which records should be available to verify insignificant activity status.

  - The category for the engines was revised to state "non-road engines".

- Revised the reports in Appendices B and C to include the full company name (i.e., "Public Service Company of Colorado", rather than "Public Service Company").

- Cleared the information from the table in Appendix F.

Total HAP Emissions (tons/yr) from Denver Steam - Natural Gas

Emission Unit	formaldehyde	acetaldehyde	toluene	benzene	acrolein	xylene	chloroform	hexane	dichlorobenzene	nickel	cadmium	chromium	Total
Boiler No. 1	6.76E-02		3.07E-03	1.89E-03				1.62E+00	1.08E-03	1.89E-03	9.92E-04	1.26E-03	1.70E+00
Boiler No. 2	7.83E-02		3.55E-03	2.19E-03				1.88E+00	1.25E-03	2.19E-03	1.15E-03	1.46E-03	1.97E+00
Total	1.46E-01	0.00E+00	6.61E-03	4.08E-03	0.00E+00	0.00E+00	0.00E+00	3.50E+00	2.33E-03	4.08E-03	2.14E-03	2.72E-03	3.67E+00

Emission factors from AP-42, Section 1.4 (dated 3/98), Tables 1.4-3 and 1.4-4.

Total HAP Emissions (tons/yr) from Denver Steam - No. 2 Fuel Oil

Emission Unit	formaldehyde	naphthalene	toluene	benzene	TCA	xylene	chloroform	hexane	dichlorobenzene	nickel	cadmium	chromium	Total
Boiler No. 1	2.17E-01	7.42E-03	4.07E-02	1.41E-03	1.55E-03					5.55E-01			0.82
Boiler No. 2	2.51E-01	8.59E-03	4.71E-02	1.63E-03	1.79E-03					6.42E-01			0.95
Total	4.68E-01	1.60E-02	8.79E-02	3.03E-03	3.34E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E+00	0.00E+00	0.00E+00	1.78E+00

Emission factors from AP-42, Section 1.3 (dated 9/98), Tables 1.3-9 and 1.3-11. Note that these tables are for residual oil, so factors are most likely conservative.